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Publication Info

Published in *Journal of Health Disparities Research and Practice*, Volume 3, Issue 1, Spring 2009, pages 1-14.

Glover, S., Xirasagar, S., Jeon, Y., Elder, K., Piper, C. N., & Pastides, H. (2009). A human capital approach to reduce health disparities. *Journal of Health Disparities Research and Practice*, 3(1), 1-14.

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A Human Capital Approach to Reduce Health Disparities

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Abstract

Objective: To introduce a human capital approach to reduce health disparities in South Carolina by increasing the number and quality of trained minority professionals in public health practice and research. **Methods:** The conceptual basis and elements of Project EXPORT in South Carolina are described. Project EXPORT is a community based participatory research (CBPR) translational project designed to build human capital in public health practice and research. This project involves Claflin University (CU), a Historically Black College University (HBCU) and the African American community of Orangeburg, South Carolina to reduce health disparities, utilizing resources from the University of South Carolina (USC), a level 1 research institution to build expertise at a minority serving institution. The elements of Project EXPORT were created to advance the science base of disparities reduction, increase trained minority researchers, and engage the African American community at all stages of research. **Conclusion:** Building upon past collaborations between HBCU's in South Carolina and USC, this project holds promise for a public health human capital approach to reduce health disparities.

Key Words: minority human capital; health disparities; minority public health professionals; minority health services researchers; linking HBCUs with research universities

INTRODUCTION

Health disparities impacting African American's (AA) continues to challenge their life expectancy and wellbeing, as well as stymie America's progress towards its Healthy People 2010 goals. The roots of disparities are complex, including disparate incidence rates, access to care, content of care and lifestyle variables, possibly interacting with poorly understood biological factors.^{1,2,3} The 2005 National Healthcare Disparities Report notes that much remains to be done to address disparities in care access and quality.³ Very little is understood regarding the biological pathways that may mediate some of the disparities.

Persistent disparities affecting African Americans are a cause of concern. Notable disparities include a 10-fold higher incidence of new AIDS cases, nearly four-fold higher hospitalizations of children with asthma (indicating inadequate ambulatory care management), almost two-fold access disparity in emergency room care, and pervasive disparities in provider-patient communication which interfere with effective care delivery and chronic disease management.³ The critical role of workforce diversity in culture sensitive patient-provider communication have been repeatedly emphasized.⁴⁻⁸ These observations call for a larger presence of African Americans in health care and public health (both research and practice), so as to infuse a sense of the minority population's needs and perspectives into America's discovery and care-giving enterprise.

The human capital theory posits that it is the human resources of an organization that provide the skills and knowledge needed to produce economic value.⁹⁻¹¹ Human capital refers to the training, experience, education, intelligence, relationships, and insight of individual employees, which result from investing in people, which in turn, increases the productivity per unit of labor.¹²⁻¹³ While the strategic, economic asset value of human capital in organizations is widely acknowledged, the contribution of appropriate human capital development to the health status of populations is not widely reported. Human capital related to health refers to individual and collective skills and capabilities that produce health.¹⁴ Increasing human capital implies investments in appropriate education and training relative to the desired good.¹⁵ Toward that end, Project EXPORT represents a human capital approach selectively targeting ethnic minority manpower increases in public health, in order to bring in the needed insights, motivation and network relationships that can address disparities.

This paper presents a state-wide initiative funded by the National Center for Minority Health Disparities (NCMHD) that will enhance human capital in public health practice and research among South Carolina's African American population, through an academic and community approach. The African

American population in South Carolina is approximately 29%, among the highest in the US,¹⁶ with abysmally high rates of the following conditions: low birth weight babies (94% higher among AA than whites), stroke (41% higher), diabetes (83% higher), cervical cancer (61% higher), obesity (56% higher), and HIV/AIDS (73% higher incidence during 2005).¹⁷⁻¹⁹

Project EXPORT is a 5-year (2005-2010) community-based participatory research (CBPR) project to systematically train African Americans in public health practice and research, representing a community-wide empowerment solution to health disparities. Project EXPORT leverages a historically black institution and the African American community to lead the disparities elimination process. The major employers of public health graduates are federal, state, and local public agencies. Local public health agencies employ the largest share of self-identified public health workers.²⁰⁻²² Therefore, it is anticipated that Project EXPORT will make a major long-term impact on health status of the African American community.

I. Philosophy of Project EXPORT

The project's philosophy draws from the principal thrust areas of the NCHMD as follows: (1) advancing the science directed toward reducing, eliminating or preventing health disparities, (2) discovering new interventions, and expanding utilization/adaptation of existing evidence-based interventions, (3) increasing minority researchers and professionals trained in biomedical and behavioral research, (4) high quality training of biomedical and behavioral researchers and professionals in health disparities research, and (5) increasing public trust, as well as dissemination and utilization of scientific and health information.

To achieve the above goals, the following are Project EXPORT's operational objectives: (1) identification and remediation of the underlying causes of disparities; (2) improved data collection and use of standardized data to identify high-risk populations and monitor the effectiveness of selected health interventions; (3) execution of community-based, culturally-appropriate health-related research among minorities to gain new insights, and translate our extensive health-related knowledge into health gains for these groups; and, (4) improved access to high quality health care, including prevention and treatment.

Project EXPORT contributes to the NCMHD goals by building research and mentorship networks between the faculty and students at CU and USC faculty. The key activities include: (1) building links between CU and USC for health disparities research, and (2) increasing the number of health services researchers conducting community-based participatory research in vulnerable and underserved communities.

II. Evidence Base for the Project EXPORT Grant Philosophy

A. Historic Contribution of HBCUs to Minority Human Capital

Historically, HBCU's have contributed significantly to the higher education of blacks. In 2001, HBCU's accounted for 2% of total colleges and universities in the United States (105 out of 4,182), 14% of black students enrolled in higher education, and 24% of bachelor degrees earned by AAs.²³ Increasing numbers of AA college graduates have translated into increasing numbers in high SES occupations, such as managerial, and professional jobs in government and private sectors. Table 1 shows the congruence of recent trends in AA college graduates with white collar employment (a near doubling in both numbers during 1990-2003). Table 1 also shows the significant contribution of HBCU's to increasing America's minority human capital.

Table 1: Trends of HBCUs' contribution to higher education among African Americans (AA), and AA employment in higher SES jobs – 1990-2003				
	1990	1995	2000	2003
AAs who earned Bachelor's Degrees from All Degree-Granting Institutions ('000s)	61	87	108	124
AAs who earned Bachelor's Degrees from HBCUs ('000s)	16	23	26	26
AA Employees in all Degree-Granting Institutions ('000s)	275 *	273	309 †	313
AAs in the State and Local Governments ('000s)	994	993	1077 [†]	1097
AAs in the Federal Government (Non-Postal) ('000s)	357	327	299	310
AAs with management, professional, and related occupations ('000s)	1954 [‡]	2649	3353	3930 [§]
AAs with other white color jobs ('000s)	3399 [‡]	3859	4569	4029 [§]
AAs in the Health Professions ('000s)	957 [‡]	1187	1455	1474 [§]
* from 1993 statistics; † from 2001 statistics; ‡ from 1991 statistics § Categories changed since 2003, when technicians and related support workers were no longer included under "other white color workers". Subset of "AAs with management, professional and related occupations. Source: U.S. Department of Education, Digest of Education Statistics 1991-2004. ³² U.S. Census Bureau, Statistical Abstract of the United States 1992-2006. ³³				

B. Minority Health Professionals' Impact on Minorities' Health Care and Outcomes

The majority of minority physicians' patients are racial/ethnic minorities. Minority providers tend to locate their practices in areas with higher concentrations of minority residents compared to other providers.²⁴⁻²⁶ Minority physicians are more likely to provide care to low-income and uninsured individuals.²⁷ About 50% of AAs are poor or near poor and 20% are uninsured.²⁸ Minority providers' client profile in terms of minority and low income patients has remained constant over time, which demonstrates their commitment to this group.²⁹⁻³⁰ Minority patients are more satisfied with care and use more health services provided by race-concordant physicians.³⁰

C. Health Disparities Initiatives Involving HBCUs

Health disparities initiatives involving HBCUs is well documented. Two such efforts are Project DIRECT and the UNC-Chapel Hill EXPORT project with Shaw University. Project DIRECT was a federally funded, community-based participatory research project by North Carolina Central University, using faith-centered communication and outreach built around the black church. The project used undergraduate students as action-research facilitators to impact diabetes self management through culturally appropriate health education and provider engagement in the southeastern Raleigh community. UNC-CH and Shaw University's Project EXPORT fostered a collaboration to build the latter's in-house capacity for developing and implementing a funded research agenda.³¹ We describe South Carolina's Project EXPORT, based at the University of South Carolina's Institute for Partnerships to Eliminate Health Disparities (IPEHD). This project seeks to leverage pre-existing collaborations between USC and South Carolina's six HBCUs, networking academic and community-based organizations to address health disparities through multidisciplinary research, education, training, and service.

III. Strategic and Operational Objectives of Project EXPORT

The strategic objective of South Carolina's Project EXPORT is to contribute to the NCMHD objectives by: (1) building a synergistic research network linking HBCUs and USC-IPEHD for health disparities research, (2) increasing the number of health services researchers conducting community-based participatory research in vulnerable and underserved communities, and, 3) Increasing minority graduates in public health and allied professions.

Project EXPORT, the fourth in a series of health disparities initiatives of the IPEHD leverages the collaborative capital accumulated through earlier initiatives: Implemented since 2003, the Kellogg-supported African American Fellowship program was primarily a minority human capital development

initiative to facilitate public health research capabilities among faculty of South Carolina's six HBCU's, Allen University, Benedict College, Claflin University, South Carolina State University, Morris College, and Voorhees College by networking them with USC's Arnold School of Public Health. It also implemented programs to facilitate their students to seek public health careers. This collaborative relationship served as the springboard for Project EXPORT. The African American Faculty Development Program, funded by the US Department of Health and Human Services supports the development of USC's faculty and infrastructure for health disparities research and service, as well as a graduate certificate (distance education) program in health disparities. Since 1988, the Palmetto Health Scholars Program has been contributing to the education and career development of AA healthcare managers through financial support and internship placement of AA students in the master of health administration program at USC. All three programs have built up professional network resources that are used in Project EXPORT.

V. Specific goals to be achieved by the Project EXPORT

To achieve its strategic objective, Project EXPORT focuses on leveraging the USC-CU linkage, to address three broad goal areas, the Research core, Research Education and Training core, and Community Outreach and Partnership core.

A. Goals of the Research Core

The broad goal is to create an infrastructure that generates and supports collaborative research opportunities involving students and faculty of USC's health sciences departments and CU, particularly joint research grants for competitive extramural funding on the sexually transmitted diseases of HPV and HIV, two major areas of health disparities in South Carolina. EXPORT research projects examine access and care utilization using a community participatory research approach, and involve research teams spanning CU and USC's schools of public health, nursing, and medicine.

B. Goals of the RET Core (Research Education, and Professional Training)

The goals of the RET core are to develop: a) Practice and research training experiences at USC for CU undergraduate and masters students in community outreach and collaborative research, b) Training of faculty in cultural competence, c) Continuing education and training at USC for practicing health professionals in state agencies on cultural competence and health disparities, d) Inter-disciplinary and inter-institutional collaboration between the EXPORT Center faculty members drawn from CU and USC, with teaching and research expertise in health disparities, and d) A dual-degree program, to confer a BS in biology from CU with an MPH from USC's school of public health.

C. Community Outreach core

The goals under this core are: a) to develop and implement culturally sensitive and linguistically appropriate programs and services to eliminate health disparities using community-based processes and community assets, and b) Develop bridges to connect the community with USC/Claflin institutional resources for eliminating HIV/AIDS and HPV/cervical cancer disparities.

VI. Project EXPORT Activities to achieve the objectives

A. Research Core

The research core focuses on advancing the science base of health disparities, concurrently contributing to: a) increasing African-American human capital equipped for health disparities research, and b) drawing the public's trust and utilization of information. It consists of two 5-year projects, and three pilot projects of 2-3 years duration. The projects are expected to develop into major collaborative initiatives or centers that will seek competitive grant funding in health disparities.

Advancing the Science Base of Health Disparities

All five projects are geared to advance the science base, accelerate the discovery of new interventions, and expand the utilization/adaptation of existing evidence-based interventions for reducing HIV/AIDS and cervical cancer disparities. One project established a Molecular Virology Laboratory (MVL) at CU to assess HIV type 1 and human herpes virus type-8 (HHV-8) viral loads in the study populations, to examine potential correlations between viral loads and the development of AIDS and Kaposi's Sarcoma (KS). Under a second project, the laboratory examines human papillomavirus (HPV) viral load and HPV 16 and 18 E7 mRNA levels in cervical cells of freshman study participants.

The second project extends a prior study of biomedical and behavioral factors in HPV persistence in USC's college-age women, to CU students. This study will produce actionable information for community education programs to be delivered through the Community outreach and RET cores. Apart from advancing the basic and applied sciences relevant to health disparities, this project contributes to AA human capital in public health by training students who work on these projects.

One pilot project explores the efficacy of a standardized stress-reduction acupuncture regimen in alleviating immuno-suppression among HIV-infected African Americans in Columbia and Orangeburg. All findings will be immediately translated into field practice, through the Community Partnerships and Outreach Core.

New discoveries regarding HIV/AIDS and HPV pathogenesis, diagnosis, and susceptibility biomarkers are expected from the HIV/HHV-8 links being explored in the first project, and the HPV persistence explored in the second project. New treatment strategies suitable for low-resource settings are expected from the acupuncture study. New strategies for public education and culturally-appropriate interventions will be the products of the second and third pilot projects.

Direct connections and strong interactions of this core with the other Project cores are critical to implementing its research findings in the community at a rapid pace. The academic-community networks that were initiated under previous IPEHD initiatives provide a head start to Project EXPORT, to rapidly achieve results in terms of basic science discoveries and bench-to-field translation into interventions to impact HIV/AIDS and cervical cancer disparities.

Increasing AA Human Capital for Disparities Research

The research core is designed to increase minority researchers and professionals trained in biomedical and behavioral research, with an emphasis on enhancing their health disparities research capabilities. All research projects provide opportunities for "hands-on" training for undergraduate and graduate students from CU and USC. The EXPORT's RET Core leadership interacts closely with the research project leaders to steer interested students to these projects, both for academic training (i.e. PhD/MS/undergraduate honors theses) and summer internships, enabling the acquisition of basic, epidemiological, clinical or behavioral research skills related to health disparities. These students present their research through short oral or poster presentations at an annual day-long scientific retreat at the EXPORT Center, sharpening their scientific presentation and discussion skills in a structured environment designed to provide feed-back. Community organizations are also invited to ensure information dissemination to the community.

Increasing Public Trust and Information Utilization

A major component of Project EXPORT is the use of the CBPR approach. These research projects recruit human subjects from the community, who understand the project and its potential outcomes, and truly participate, rather than simply enrolling as "subjects". Community leaders have been involved during development of the EXPORT proposal, and a steadily expanding circle of community representatives remains engaged with the project through its Community Partnership and Outreach Core, monthly work meetings, annual research symposia, and other informal gatherings and events. Communication between the Project EXPORT cores is critical in order to integrate the project with the communities served.

B. Research Education, and Professional Training of Minorities (RET Core)

The key objective of the RET core is to increase the pool of AA researchers and professionals through: a) mentoring undergraduates to influence their career path selection, b) providing financial support and disparities research training for African American students during public health graduate degree programs, and, c) funding a mentored research program at the doctoral and post doctoral level.

B.1. Sequential RET inputs in Undergraduate Education

a) *Undergraduate course in public health:* This component was designed to increase the number of students in public health programs and related courses at HBCU's. CU students in public health and allied programs are provided tuition support for a public health seminar course, developed earlier under a Kellogg-supported grant. The course introduces students to the public health disciplines and related careers, health status issues, and diseases that disproportionately affect African-Americans.

b) *Undergraduate research seminar:* During each fall semester, CU undergraduate students are offered an informal seminar series, in which EXPORT faculty, other USC faculty, and community investigators present their research on health disparities. These seminars offer opportunities for students to select research mentors and community partners for their internship and community-based research projects, both required activities for sponsored students.

c) *Undergraduate research internships:* Each spring Semester, 10 talented undergraduate students are selected (5 each from CU and USC, based on academic merit and commitment) for summer internships in health disparities research projects at USC or CU. Each student presents a mentored research paper at a regional or national conference. The student also prepares and presents a senior thesis.

d) *Collaboration with CU Department of Art.* Undergraduate students in CU's department of Arts are involved through the Community Outreach core in a map learning process, to develop a visual situational analysis display of the forces to be addressed in order to accomplish the community's goals. Other relevant artwork development activities are also envisaged to enable dissemination of the EXPORT philosophy among CU students.

e) *Post baccalaureate program.* One disadvantaged CU student each year is supported through a one-year post baccalaureate program. The student is coached to compete for admission into USC's graduate programs. The program includes a diagnostic summer session followed by nine months of course work, and preparation for graduate entrance exams and cultural competence training.

B.2. RET inputs for graduate education in public health

a) *Health disparities research fellowships.* Applicants to CU's MS (Biotechnology) program are invited to apply for EXPORT fellowships. Each year 1-2 fellowships are awarded, providing an annual stipend of \$15,000 and a partial tuition remission that is granted by CU. EXPORT fellows are exempt from teaching assistant duties, allowing time for health disparities research. Fellows present a paper at a national or international conference, and prepare their thesis on a health disparity issue that is presented to the student body, in order to raise students' awareness.

b) *EXPORT graduate fellowships.* Master's and doctoral students are assisted with tuition support, fellowships, stipends, and graduate assistantships. Selection is based on academic and leadership potential, using systematic screening and interview procedures. Doctoral student fellows are mentored by USC and CU public health faculty to develop research expertise, scientific articles, federal grant submissions, and other independent researcher competencies. Project EXPORT's emphasizes the development of strong research relationships between HBCU alumni and HBCU faculty while the graduate students study at USC, in order to facilitate a possible return to a HBCU as an instructor or researcher.

B.3. Post-Doctoral RET input for minority researchers

In order to reduce health disparities, talented and well-qualified research professionals are needed, who are able to address the full depth and breadth of health disparities research. The EXPORT Center funds one post-doctoral fellow each year to focus on HIV/AIDS or HPV/Cervical Cancer health disparities research. Fellows are selected through a competitive process and provided research opportunities commensurate with their expertise. The EXPORT Center also links the post-doctoral fellows with CDC's Minority AIDS Initiative and Minority AIDS Research Initiatives (MARI) that seeks to recruit from a talent pool of ethnic/racial minority researchers who are motivated to work with communities of color.

B.4. RET Inputs for Faculty Career Development

The EXPORT project matches minority post-doctoral research fellows and junior faculty at USC and CU with established researchers for long-term mentoring experiences. The EXPORT project is also developing an on-line certificate program in health disparities to reach out to CU faculty with heavy teaching loads. The certificate program stems from a pilot course in health disparities research offered via streaming video, in which 16 HBCU faculty participated. Project EXPORT is also designing a retention strategy to support the career development of non-tenured minority faculty at USC and the HBCUs.

C. Community Partnerships and Outreach Core

The Community Partnerships and Outreach Core (CPOC) focuses on two major project objectives, a) to expand the adaptation of evidence-based interventions to reduce health disparities, and b) increasing the minority population's trust in the health system. The CPOC core engages the Orangeburg County community for creating a community-based infrastructure for convergence of resources and programs concerning the overarching EXPORT theme of HIV/AIDS and HPV/cervical cancer disparities. It engages the community for developing and implementing culturally sensitive and linguistically appropriate programs, to garner resources, and to improve service utilization through community-based processes, guided by the Community Advisory Group (CAG).

Summary Comment

Project EXPORT is an ambitious project that uses a comprehensive human capital approach, seeking to impact health disparities in South Carolina by increasing African Americans' presence in public health at all levels, from community-based advocates for public health activities, through baccalaureate-trained advocates and public health functionaries, master of public health and health science professionals, and basic/applied science researchers in health disparities research. Through inter-linkages between its research, training and community cores, Project EXPORT seeks to enhance the science base for disparities elimination, with an organic, bottom-up community involvement in problem definition and solution-seeking. Evaluation processes are underway to examine the extent to which the project's organic approach to disparities elimination is successful.

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Acknowledgements

The EXPORT Project is funded by the National Center for Minority Health and Health at the National Institutes of Health Centers of Excellence in Partnership, Outreach, Research and Training. We acknowledge the contribution and role of Project EXPORT's institutional partner Claflin University, Orangeburg, South Carolina.

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